ADF

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AVONLEA KOCHIA QUALITY TESTS

D-89-05-0549

FINAL REPORT

AUON LEA

KOCHIA QUALITY TESTS

D-89-05-0549

An AOF Project 1989.

PROJECT PURPOSES

To determine viability of kochia as a forage crop on poor quality land.

To compare native kochia to seeded kochia.

To compare fertilized to unfertilized kochia.

To identify optimum stage for cutting based on feed analysis and comparing early and late cutting.

NOTE

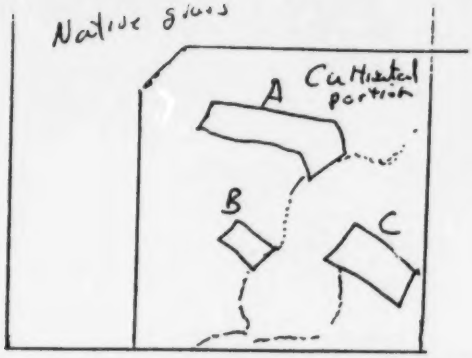
Three sites and co-operators developed rather unique trials incorporating portions of the above purposes. Each site had to be modified due to the condition and location of the native kochia.

1. Site 1 - Walter Bedford

S.W. - 34 - 12 - 23 - W2

Wally had intended to compare seeded and native kochia. The project was not completed because the native kochia was so concentrated it actively resulted in a poor stand.

OBSERVATION: It is noteworthy to observe that a potential problem with native kochia for feed may be crowded plant population resulting in poor stands some years even though the previous year had shown indications of a good stand.



2. Ken Miller

NE - 12 - 11 - 24 - W2

SITE HISTORY

1987 - The cultivated portion of this quarter was seeded to durum wheat.

- A good crop of native kochia grew in areas A, B, & C. (see below)

1988 - No cultivation

- A good crop of kochia grew in areas A, B, & C but some patchiness occured.

1989 - Area A cultivated in fall of 1988 and seeded for ADF project in spring 1989.

- Area B no tillage, no seeding resulted in no kochia at all. Foxtail barley grew in this area.

- Area C no tillage, no seeding resulted in a poor crop of kochia.

YIELD RESULTS - AREA A

First cut July 8, 1989 and baled July 15 resulting in 1920 lbs per acre.

Second cut July 19, 1989 and baled July 28 resulting in 2057 lbs per acre.

OBSERVATIONS

The early cut kochia seemed more palitable than later cut kochia. The early cut kochia had some mold in contrast to the late cut kochia which was drier and coarser stemmed.

The cattle did not appear to discriminate between the two samples.

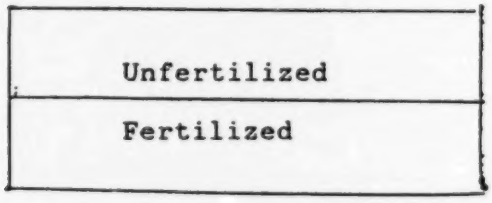
The co-operator felt that kochia was a valuable crop in saline areas.

3. Kim and Todd Holland

HISTORY

The field used for this project had a history of salinity problems and was normally seeded to barley.

DESCRIPTION



The field was divided in two and seeded May 10 to tame kochia. Half the field was fertilized with 75 lbs. of 27-27-0 using hoe-drills and a seeding rate of 2 lbs. per acre. Good germination occured with a rainfall on the 12th of May. A very uniform healthy stand emerged on all the field.

RAINFALL PATTERN

Cummulative rainfall to July 12 was 7.6 cm. and increased to 9.55 cm. by July 28. There were frequent showers during this period.

SWATHING - BALING

First cut July 12, baled July 22

Second cut July 28, baled July 31.

Note: The rainfall had significant implications to this trial. The second cut deteriorated significantly from rainfall between swathing and baling.

YIELD - as based on bale weight

First cut unfertilized	-	1000 lbs.
First cut fertilized	-	1312 lbs.
Second cut unfertilized	-	1125 lbs.
Second cut fertilized	-	1875 lbs.

OBSERVATIONS

1. Protein - The higher protein levels of the first cut vs. second cut (13% vs 9%) may be a result of weathering from rainfall rather than the date of cutting.

2. T.D.N. - No significant pattern emerged. Again rainfall and swath deterioration on second cut made the comparison difficult.

3. Yield - Later cut kochia yielded higher but of a coarser quality. Again the comparison was difficult beyond total yield because of the vast difference in swath quality from rainfall.

4. Fertilized vs. Unfertilized - The fertilizer cost of $12 per acre was more than offset by increased yield.

   First cut - yielded approximately 25% more
   Second cut - yielded approximately 40% more

THREE SITE OBSERVATIONS

1. Seeded kochia showed promise as an alternate cropping practice on salinity problem fields both from yield and quality standpoint.

2. Native kochia had a very unpredictable yield from year to year. Studies on toxicity from crowded plant populations could be considered.

3. An economic response to fertlizer was measured on both sites but quality comparisons were hampered by rainfall damage to swaths.

4. Overall field quality and quantity despite the rainfall damage suggests kochia may have good merit for further studies.

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Agriculture

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Feed Testing Service

FEED ANALYSIS REPORT

KIM & TODD HOLLAND

Report to: Ralph Howes
c/o 104 Oxford Street East
Moose Jaw, SK
S6H 0S6

cc: Darry Peterson, Livestock Specialist, SWIFT CURRENT, Sask.

Lab Number & Sender's Description	Moisture %	Protein %	Estimated Energy % T.D.N.	Calcium %	Phosphorus %	Nitrate %	pH
A89/2,837 #1 - 1st cut Fertilized - Todd Holland	9.66	12.50	49 - 51	0.89	0.22	0.63	
	100%Dry Matter	13.83	54 - 57	0.99	0.24	0.70	
A89/2,838 #2 - 2nd cut Fertilized - Todd Holland	17.43	9.51	52 - 54	0.72	0.20	nil	
	100%Dry Matter	11.52	63 - 66	0.87	0.24		
A89/2,839 #3 - 1st cut Unfertilized - Todd Holland	10.31	11.73	55 - 57	0.75	0.26	nil	
	100%Dry Matter	13.08	61 - 63	0.83	0.29		
A89/2,840 #4 - 2nd cut Unfertilized - Todd Holland	19.39	8.04	48 - 50	0.74	0.21	nil	
	100%Dry Matter	9.98	60 - 62	0.92	0.26		

Results are based on the moisture content of the sample as received or as specified above. The responsibility of a sample being representative of the batch feed from which it was taken shall be that of the client.

Sample 2837 is above the potentially toxic level of 0.50% nitrate on a 100% Dry Matter basis. A a result this feed should make up no more than 68 percent of a total daily feeding program.

R. E. Mattinson
Director/Nutritionist
Ph. 966-5620

Sample received: 08/11/89
Report completed: 08/18/89